DOCUMENT RESUME

ED 111 806 95 SP 009 499

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TITLE NIE Conference on Studies in Teaching; Panel 5, Teaching as a Linguistic Process in a Cultural Setting.
INSTITUTION National Inst. of Education (DHEW), Washington, D.C.
PUB DATE Dec 74
NOTE 42p.; For related documents, see SP 009 494-504

EDRS PRICE MF-$0.76 HC-$1.95 Plus Postage
DESCRIPTORS *Applied Linguistics; *Classroom Communication; *Classroom Environment; *Communication Problems; *Communication Skills; Educational Research; Receptive Language; Second Language Learning; Student Teacher Relationship; Teaching

ABSTRACT

The goal of this panel was to develop the means to improve teachers' work on the basis of improved understanding of linguistic phenomena in school settings. The panel organized its research approaches and programs around ways in which effective communication in the classroom is different from everyday talk to which all children are enculturated, communication problems encountered when the participants come from different cultural backgrounds, and ways in which teachers' work can be improved on the basis of understandings achieved in the above research. From this, the panel formulated the following six approaches in order to meet their goal: (1) determine the rules governing classroom discourse and the relationship between classroom discourse and frame factors in the school; (2) study the acquisition by students of rules for school disclosure; (3) determine ways in which differences in dialect, language style, and interactional norms affect learning in the classroom; (4) describe and analyze patterns of student-teacher communication in order to determine the effect of the social identity of the participants on ways in which teachers overtly and covertly present information; (5) specify the critical components of characteristics of natural communication situations that are necessary for the acquisition of a second language, and that will encourage native language maintenance; and (6) develop and field test materials and procedures to improve teaching, and thereby learning, on the basis of knowledge of linguistic process in classrooms. (BD)

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NIE CONFERENCE ON STUDIES IN TEACHING

PANEL 5

TEACHING AS A LINGUISTIC PROCESS IN A CULTURAL SETTING

GOAL STATEMENT

To develop the means to improve the teacher's work on the basis of improved understanding of linguistic phenomena in school settings.

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Washington, D.C.
December, 1974

N. L. Gage, Editor
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PREFACE

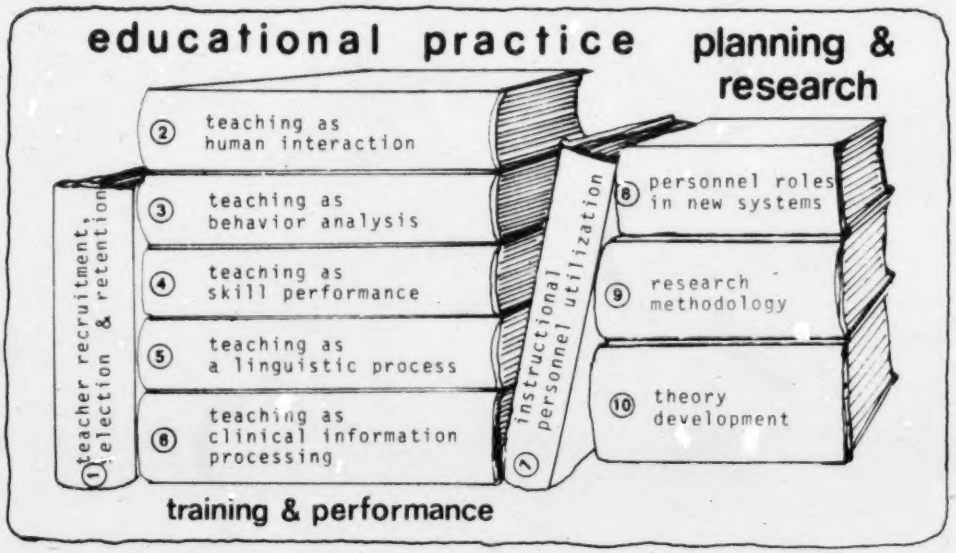
The volume before you is the report of one of ten panels that participated in a five-day conference in Washington during the summer of 1974. The primary objective of this Conference was to provide an agenda for further research and development to guide the Institute in its planning and funding over the next several years. Both by the involvement of some 100 respected practitioners, administrators, and researchers as panelists, and by the public debate and criticism of the panel reports, the Institute aims to create a major role for the practitioner and research communities in determining the direction of government funding.

The Conference itself is seen as only an event in the middle of the process. In many months of preparation for the Conference, the staff met with a number of groups -- students, teachers, administrators, etc. -- to develop coherent problem statements which served as a charge to the panelists. Panel chairmen and others met both before and after the Conference. Several other panelists were commissioned to pull together the major themes and recommendations that kept recurring in different panels (being reported in a separate Conference Summary Report). Reports are being distributed to practitioner and research communities. The Institute encourages other interest groups to debate and critique relevant panel reports from their own perspectives.

The Conference rationale stems from the frank acknowledgment that much of the funding for educational research and development projects has not been coordinated and sequenced in such a way as to avoid undue duplication, yet fill significant gaps, or in such a way as to build a cumulative impact relevant to educational practice. Nor have an agency's affected constituencies ordinarily had the opportunity for public discussion of funding alternatives and proposed directions prior to the actual allocation of funds. The Conference is thus seen as the first major Federal effort to develop a coordinated research effort in the social sciences, the only comparable efforts being the National Cancer Plan and the National Heart and Lung Institute Plan which served as models for the present Conference.

As one of the Conference panels points out, education in the United States is moving toward change, whether we do anything about it or not. The outcomes of sound research and development -- though only a minute portion of the education dollar -- provide the leverage by which such change can be afforded coherent direction.

In implementing these notions for the area of teaching, the Conference panels were organized around the major points in the career of a teacher: the teacher's recruitment and selection (one panel), training (five panels), and utilization (one panel). In addition, a panel was formed to examine the role of the teacher in new instructional systems. Finally, there were two panels dealing with research methodology and theory development.


educational practice
planning & research
② teaching as human interaction
③ teaching as behavior analysis
④ teaching as skill performance
⑤ teaching as a linguistic process
⑥ teaching as clinical information processing
① teacher recruitment, selection & retention
⑦ instructional personnel utilization
⑧ personnel roles in new systems
⑨ research methodology
⑩ theory development
training & performance

Within its specific problem area, each panel refined its goal statement, outlined several "approaches" or overall strategies, identified potential "programs" within each approach, and sketched out illustrative projects so far as this was appropriate and feasible.

Since the brunt of this work was done in concentrated sessions in the space of a few days, the resulting documents are not polished, internally consistent, or exhaustive. They are working papers and their publication is intended to stimulate debate and refinement. The full list of panel reports is given on the following page. We expect serious and concerned readers of the reports to have suggestions and comments. Such comments, or requests for other panel reports, should be directed to:

Assistant Director
Program on Teaching and Curriculum
National Institute of Education
1900 M Street, N.W.
Washington, D. C. 20208

As the organizer and overall chairman for the Conference and editor for this series of reports, Professor N. L. Gage of Stanford University richly deserves the appreciation of those in the field of teaching research and development. The panel chairpersons, singly and together, did remarkable jobs with the ambitious charge placed before them. Special acknowledgments are due to Philip Winne of Stanford University and to Arthur Young & Company for coordination and arrangements before, during, and after the Conference. But in sum toto, it is the expert panelists -- each of whom made unique contributions in his respective area -- who must be given credit for making the Conference productive up to the present stage. It is now up to the reader to carry through the refinement that the panelists have placed in your hands.

Garry L. McDaniels
Program on Teaching and Curriculum

LIST OF PANEL REPORTS AND CHAIRPERSONS

1. Teacher Recruitment, Selection, and Retention, Dr. James Deneen, Educational Testing Service
2. Teaching as Human Interaction, Dr. Ned A. Flanders, Far West Laboratory for Educational Research and Development
3. Teaching as Behavior Analysis, Dr. Don Bushell, Jr., University of Kansas
4. Teaching as Skill Performance, Dr. Richard Turner, Indiana University.
5. Teaching as a Linguistic Process in a Cultural Setting, Dr. Courtney Cazden, Harvard University
6. Teaching as Clinical Information Processing, Dr. Lee S. Shulman, Michigan State University
7. Instructional Personnel Utilization, Dean Robert Egbert, University of Nebraska
8. Personnel Roles in New Instructional Systems, Dr. Susan Meyer Markle, University of Illinois
9. Research Methodology, Dr. Andrew Porter, Michigan State University
10. Theory Development, Dr. Richard Snow, Stanford University

- Conference on Studies in Teaching: Summary Report, Dr. N. L. Gage, Stanford University

INTRODUCTION

The study of linguistic phenomena in school settings should seek to answer educational questions. We are interested in linguistic forms only insofar as through them we can gain insight into the social events of the classroom and thereby into the understandings which students achieve. Our interest is in the social contexts of cognition: speech unites the cognitive and the social. The actual (as opposed to the intended) curriculum consists in the meanings enacted or realized by a particular teacher and class. In order to learn, students must use what they already know so as to give meaning to what the teacher presents to them. Speech makes available to reflection the processes by which they relate new knowledge to old. But this possibility depends on the social relationships, the communication system, which the teacher sets up.

The basic assumption that underlies all our approaches is that language (verbal and nonverbal) is more than a medium for referential communication. In contrast to computer languages, for example, the form and structure of what is said in natural languages, the speaker's selection among verbal and nonverbal alternatives, significantly influence the interpretation of messages and thus the results of education. This assumption is basic to modern linguistics, cognitive psychology, cognitive anthropology, and ethnography which are the core disciplines relevant to the work of this Panel.

We have considered the special domain of our Panel to include three questions. The first question asks, In what ways is effective communication in the classroom different from ordinary, everyday talk to which all children are enculturated? Approaches 1 and 2 address this question.

Approach 1 calls for continued basic research on ways of describing classroom talk. Mindful of the many analytic schemes now in existence, we are not recommending further proliferation of ad hoc, nontheoretical work. But we are convinced that recent theoretical insights in the core disciplines offer new and promising approaches.

Approach 2 calls for research in a virtually untouched area: how children learn to talk appropriately in school. It is only when a "stumble" occurs in the normal flow of talk that one is aware that rules do exist

for the classroom discourse "game," and that children have to learn them. For example, the following occurred in a middle-class preschool:

T: (referring to yesterday's cooking experience)

What did we put in the soup?

C: (gives a questioning look)

T: repeats question with smile.

C: Dunno, What? (continuing conversation with a smile as if to say, "OK, let's play together.")

T: (Giggling and looking embarrassed). Un, you tell me (Elsa Bartlett, personal communication).

While it is appropriate for a child to say he doesn't know the answer to a teacher's question, it is not appropriate in school, as it might be at home, for the child to ask the adult to provide the answer. More general documentation of the need for continued rule learning comes from situations of discontinuity within the school experience itself -- e.g., when first grade teachers complain that children who've been in Headstart don't know how to behave in school (verbally as well as nonverbally); or when older grade teachers complain that children haven't learned how to work in committees.

The second question (especially significant for NIE's goal of supporting maximal educational opportunities for all) asks, What particular communication problems are encountered when the participants come from different cultural backgrounds? Program 5.1.2 and Approaches 5.3, 5.4, and 5.5 are addressed to various aspects of this question.

Program 5.1.2 calls for research on the "frame factors" (i.e., the variables that constitute the context within which classroom discourse occurs) which influence classroom discourse. Since student and teacher characteristics are included among these frame factors, this approach subsumes such phenomena as the interaction between the structure and size of the classroom group and the cultural backgrounds of students. For example, Bellack, et al. (1966), reported a high consistency of certain features of classroom discourse across classrooms, including a very high proportion of "soliciting" moves made by the teacher. In different research traditions, this teacher-soliciting-pupil-responding pattern has been shown to be ineffective and even detrimental to the participation of Black children (Labov, 1970), Hawaiian children (Boggs, 1972), and American Indian children (Philips, 1972). To design more powerful educational environments, we need more information about how different children respond in a wide variety of situations.

Approach 5.3 includes three more specific aspects of cultural differences in language use: comparisons of language use in school and at home; the phenomenon of code-switching as it occurs in bilingual and

bidialectal classrooms; and a suggestion for the development of one curriculum area, science, for expanding children's discourse repertoire. While any lesson can be used for this purpose if the teacher retains a dual focus on subject content and discourse process, science seems to be an especially useful context because of its particular communicative demands and the relative value neutrality of its content.

Approach 5.4 examines differences in the quantity and quality of encounters between teachers and children in which knowledge and skill is or is not transmitted. The hypothesis behind such research is that the distribution is usually unequal, that such inequality is based on the cultural identities and values of the participants, and that qualitative differences in the verbal and nonverbal aspects of the encounters (the covert message) are as important an influence on learning as the frequency of the encounters themselves. For example, a teacher or guidance counselor can tell a pupil about what it takes to be a doctor, and yet convey, in subtle aspects of the adult's verbal and nonverbal behavior, that that role is not for the pupil.

Approach 5.5 deals specifically with interaction in bilingual classrooms. Problems in learning, and therefore in teaching, encountered by children who do not understand English are being discussed at all levels of educational decision-making, up to the Supreme Court (e.g., Lau vs. Nichols). Both Court decisions and legislation in many States have mandated improved teaching techniques for children of limited English-speaking ability.

Moreover, recent research findings indicate that a second language, like a first language, may be learned better from being used in specific types of natural communication situations. Knowledge about the specific characteristics of classroom discourse conducive to second language learning is important for the general school curriculum as well as for special language classes. Approach 5 seeks to determine those aspects of classroom discourse that can contribute most to second language learning, and have least effect on first language loss.

We do not in any way imply that the problems of non-English speaking children deserve more research attention than the problems of children who speak a nonstandard form of English. Bidialectal and bilingual settings share an important characteristic: the participants' attitudes toward language differences are at least as important as the extent of the linguistic differences themselves. Both are high priority settings for all our proposed research.

Aspects of the question addressed in Program 5.1.2 and Approaches 5.3 , 5.4 , and 5.5 are separated here for presentation purposes only. Any one research project might involve variables that are separated here (e.g., Gumperz & Herasimchuk, 1973, which is a study of code-switching and discourse structure).

The third question asks, How can the teacher's work be improved on the basis of the understandings achieved in the above research? Because we believe that the most potent effect comes through a teacher's analysis of her own behavior rather than by the presentation of substantive findings in any pre- or in-service course, there is a particularly important relationship between all of the above research and our suggestions for teacher training. In short, we want to teach teachers to be their own informal ethnographers. Thus, effective methodologies for analyzing any aspect of classroom discourse will not only yield substantive information, but also constitute procedures that may be adaptable for teacher training in self-analysis.

Recommendations for research on how to help teachers interact more effectively could have been appended to each of the proceeding approaches. They are separated here partly for simplicity of presentation and, more important, because any one project to change classroom interaction patterns may draw on findings and methodologies from several approaches, not just one alone. Take, for example, the finding of the U.S. Commission on Civil Rights Mexican-American study (1973) that teachers in bicultural southwestern classrooms respond more often to Anglo children than to Mexican-American children with acceptance and praise. It seems unlikely that these interaction patterns can be changed simply by getting the teachers to distribute their praise more equally. We assume that teacher-student interaction is a two-way interactive system, and that the teacher needs help in understanding not only what she is doing (Approach 5.1), but also what the children are doing and why (Programs 5.3.1 and 5.3.2) and how children can be helped to acquire new communication strategies (Approach 5.2).

In making these recommendations, we recognize that, in the end, it is necessary to show the effects of these linguistic, or discourse, processes on what children learn -- about substantive knowledge and skills, about themselves and their society, about their conceptions of self as learner. We also recognize that we are asking NIE to invest further in a field where few analyses have so far been able to show such effects. Our hopes for increased understanding, and thereby improvement of the teaching process, rest on three arguments: first, that more powerful analyses of linguistic phenomena are being, and can further be, developed; second, that wherever possible studies on classroom discourse must differentiate more than they have in the past among the communicative roles that children play as subgroups and individuals, rather than consider them as a total classroom group; and third, that research should compare classroom interactions selected on some criterion of effectiveness. Each of these arguments deserves further comment.

In any research dealing with communication, the data and methodology are inseparably connected with the research topic and research goal. Given the present state of socio- and psycholinguistic theory, it is impossible and premature to agree on a definite set of valid and analyzable

variables (See review by Dunkin & Biddle, 1974). Possible linguistic variables include the following (in an unordered list):

1. Content categories (words or phrases) occurring in texts and measured in terms of frequency, co-occurrence, or type-token ratio (DeSola-Pool, 1959).

2. Discourse structures, sequences and strategies seen as moves in a Wittgensteinian language 'game' (Bellack, et al., 1966; Sinclair, et al., 1972; Schegloff, 1968; Turner, 1969).

3. Rules governing the selection of phonological, syntactic, or semantic variables (Labov, 1970; Gumperz, 1974).

4. Lexical structures as studied by cognitive anthropologists and psychologists (G. Miller, 1972).

5. Nonverbal channels and signs used in interaction (Erickson & Schultz, 1973; Shefflin, 1972).

Which variable is selected depends on the question being asked. While many of our approaches and programs deal with discourse structures, Approach 1.2 might involve content categories and lexical structures when frame factors of subject matter and forms of knowledge are involved; Approach 5.2 on code-switching involves the rules governing the selection of phonological, syntactic, or semantic variables; and Approach 5.4 on the distribution in quantity and quality of educational encounters would also require the analysis of nonverbal channels and signs. It is obvious that the expertise required of the investigator, and the equipment and time needed, will vary in each case. Wherever possible, practicing teachers should be collaborators in the research, because it is their judgments as participants that we seek to understand.

The unit of analysis for speaker or listener should be less than the classroom group taken as a whole. The use of such units is possible with existing analytic schemes, but it is too rarely done. No educational "treatment" is homogeneous with respect to all children even in "traditional" classrooms, and "open" classrooms with more student selection of activities increase that heterogeneity to the point where each child is getting (in part by constructing) his own curriculum, including the amount and type of his interaction with peers and teachers. This differentiation may be patterned along lines of ethnicity (United States Commission on Civil Rights 1973 Mexican-American Study); some perceived evidence of ability (e.g., Rist. 1970); sex (Cherry, 1974); or some combination of these and other characteristics. Such patterns can be discovered only if information on the identity of individual participants is maintained. Once they are discovered, further research is possible to explain why they occur and how they might be changed.

How do we arrive at some criterion of effective discourse? Ultimately, we want to relate aspects of linguistic processes in the classroom to children's learning (see Piestrup, 1973, for an almost unique example of relationships between (a) features of teacher-child interaction in the teaching of reading and (b) reading achievement.) A helpful analogy may be provided by research on the effects of drugs; doctors need to know main effects and side effects, intended and unintended outcomes, on patients with particular characteristics. Similarly, information is needed on the effects of particular interaction patterns. Such information is essential for informed decisions -- by teachers themselves, and by others who are involved in the selection and pre- and in-service training of teachers. But we realize that at this point we share with all evaluation research the weakness of available outcome measures, especially measures of more subtle and more long-term effects.

Two alternative strategies are possible. One is to build into any classroom interaction research a comparison between classrooms which have been independently judged to be more or less effective on some criteria, even if actual learning outcome measures are not available. The judgements of teachers and even children can be used. Rosen & Rosen (1973) quoted extensively from classroom discourse selected as exemplary by sensitive teachers. Lein observed a teacher considered "their favorite" by Black migrant children in Florida. She comments:

> "Sitting in his class, I realized how difficult it would have been for me to cope with his teaching style had I been in his fifth grade. His speech was full of threats, and his manner seemed challenging and intimidating to me. However, the migrant children spoke to him spontaneously and participated actively in his class" (1973, pp. 143-4).

It would be important to analyze the interaction of such teachers in more detail.

Alternatively, one can decide to work with process rather than product indices of the quality of classroom language. Such process measures might include some internal criterion of "coherence," measures of increased communication (either in more equal distribution of talk or decreased misinterpretations of the talk that does occur), or qualitative evaluations of the cognitive level of children's contributions to the discourse (e.g., Susskind, 1969).

APPROACH 5.1

DETERMINE THE RULES GOVERNING CLASSROOM DISCOURSE AND THE RELATIONSHIP BETWEEN CLASSROOM DISCOURSE AND FRAME FACTORS IN THE INSTITUTIONAL SETTING OF THE SCHOOL

Approaches 5.1 and 5.2 address the question of the ways in which effective communication in the classroom differs from ordinary, everyday talk to which all children are enculturated. As discussed in the previous section, Approach 5.1 calls for continued basic research on ways of describing classroom talk. Mindful of the many analytic schemes now in existence, the Panel is not recommending further proliferation of ad hoc, nontheoretical work. But it is convinced that recent theoretical insights in the core disciplines offer new and promising approaches.

Program 5.1.1 : Investigate the Nature of Rules Governing Classroom Discourse.

For purposes of this program, "rules of classroom discourse" refer to tacitly known rules that make it possible for speakers to cooperate in the joint production of a coherent spoken text.

During recent years educational and linguistic researchers have developed a wide variety of systems for analysis of classroom discourse (Simon & Boyer, 1969,; Sinclair et al., 1972; Gumperz, 1974; etc.). These discourse models, developed from a variety of theoretical perspectives, have been used to describe the classroom verbal interaction of teachers and students.

These systems should be analyzed in an effort to construct a more inclusive system of categories that will embrace the significant elements of systems already developed. The purposes of this synthesized system would be (1) to establish a common base from which to derive hypotheses about materials and procedures for teacher education, and (2) to reveal the need, if any, for further analytic concepts and tools in the light of recent theoretical work in linguistics and other relevant disciplines.

The basic assumption underlying the program is that the classroom discourse of teachers and students conforms to rules which can be discovered and analyzed. The purposes of the program are twofold: (a) to construct alternative synthetic systems for analysis of classroom discourse, drawing on compatible systems already developed, and (b) to construct alternative systems for the analysis of classroom discourse based on promising theoretical advances in linguistic and other core disciplines.

Program 5.1.2 : Determine Ways in Which Classroom Language Varies as a Function of Frame Factors, and Their Interaction, in the Institutional Setting of the School.

For purposes of this program, frame factors are the variables that constitute the context within which classroom discourse occurs; they include subject matter, forms of knowledge, task orientation, student and teacher characteristics (e.g., age, ethnicity), time allocation, materials of instruction, physical facilities, size and structure of interaction groups, and administrative structure.

Research on classroom teaching has revealed that the discourse of teachers and students is patterned and not randomly organized. It seems reasonable to assume that the structured forms of classroom discourse are influenced by a variety of factors in the school setting, such as those listed above. The purpose of this program is to investigate the relationships of these frame factors and classroom discourse.

Educational researchers have been studying teaching, including patterns of classroom discourse, for several decades. The volume of studies increased markedly during the 1950s and 1960s: note the Handbook of Research on Teaching (Gage, 1963), and Second Handbook of Research on Teaching (Travers, 1973). Within recent years, increasing numbers of linguists are focusing attention on the functional forms of language in a variety of different social contexts, including the classroom (Cazden, et al., 1972; Sinclair, et al., 1972). Contemporary linguistic and educational research provides us with a variety of alternative discourse models that can serve as invaluable tools for researchers as the study of classroom teaching is expanded to include the study of relationships between discourse variables and frame factors in the institutional setting of the schools. The knowledge now available is largely confined to relationships between classroom language and subject matter and forms of knowledge (B. O. Smith et al., 1962, 1966). Less is known about the relationships between discourse variables and other frame factors, such as size and structure of interactive groups, time allocation, ethnicity of students and teachers, physical setting, and materials of instruction.

Following are three hypotheses among many which should be tested. Each is stated in terms of a single variable for convenience as examples, but the statement is not intended to suggest research designs.

Hypothesis 1: given students of specified ethnic group, interactive groups of specified size and structure, and specified time allotment, the pattern of classroom discourse varies with (1) the subject matter and (2) forms of knowledge under study. This study is designed to shed light on the question of the extent to which linguistic teaching acts are content-specific or generic in nature. If generic, then teachers can be trained in them without respect to subject matter; if not, then the teaching acts must be taught to teachers in content-specific contexts.

Hypothesis 2: if all frame factors with the exception of socio-cultural background of students are held constant, then the pattern of discourse varies with the socio-cultural background of the students. This study will shed light on aspects of discourse patterns which vary as a function of socio-cultural background. It may be, for example, that multi-sociocultural settings promote richer patterns of discourse, or it may be that such settings lead to miscommunication and thereby interfere with classroom learning.

Hypothesis 3: if all frame factors with the exception of task orientation (e.g., individualized instruction, group problem solving) are held constant, then the pattern of discourse varies with the task orientation. This study would identify the verbal acts associated with various task orientations.

Two basic assumptions underlying the programs are that (a) classroom discourse is patterned, and not randomly organized and (b) classroom discourse is related to frame factors in the institutional setting of the school. The purpose of the program is to determine the relationships between classroom discourse and frame factors to improve teacher-pupil discourse, and ultimately to test effects of these improvements on students. To the extent that teachers must be trained in elements of classroom discourse, this approach overlaps with the concerns of Panel 2 on teaching as human interaction and Panel 3 on teaching as skill performance.

APPROACH 5.2

STUDY THE ACQUISITION BY STUDENTS OF RULES FOR SCHOOL DISCOURSE

If we assume that classroom discourse is patterned and conforms to rules, then we can ask how it is that children acquire such rules. The question can be asked in two contexts: How it is that young children (between the ages of three and six) initially acquire these rules, and How it is that older or more experienced students both acquire new rules and adapt their existing set of rules and expectations to the requirements of new educational environments.

To answer the question, we must consider the characteristics of the child (particularly the young child) both as an immature information processor and as a member of a specific socio-cultural group. From previous language acquisition findings in syntax (e.g., Slobin, 1973; R. Brown, 1973; Cazden, 1968), and in semantics (Bartlett, 1974), we might expect that there will be certain 'universal' patterns of acquisition as well as cross-cultural differences. But we cannot assume that discourse rules are learned in the same way as aspects of language structure. The nature of similarities and differences between these processes is a significant empirical question.

Various classroom factors may be important. Teacher characteristics, children's expectations about school, class size, the type of classroom organization, task orientations within the classroom, materials of instruction, and classroom architecture are just some of the factors which might have an effect. Although we know that teachers do, on occasion, make the rules of discourse and interaction explicit (particularly when things go wrong), we do not know just how this explicit formulation affects the acquisition of these rules and whether the effect is different for children of differing ages. Nor do we know how peer interaction affects this learning.

In the past, most studies of the acquisition of communication skills have, in fact, been studies of the acquisition of certain aspects of the referential function of language. In many cases, the studies have analyzed whether a child's speech is 'egocentric' or takes into consideration the information needs of the listener (e.g., studies by Flavell et al., 1968).

Until quite recently, researchers have ignored the process by which children acquire the various communicative functions of language, how they come to translate these functions into sentences and gestures, how they learn conversational rules and strategies. Recently, however, researchers have begun to focus on such questions as the function of children's early utterances (Bloom, 1970; Dore, 1973; Halliday, in press)and the patterns of interaction between mother and child (Nelson, 1973, Bruner, 1974). In addition, recent research on how adults structure their conversations (e.g., Gordon & Lakoff, 1971; Soskin & John, 1963) is beginning to provide both a theoretical and methodological framework for the study of how children acquire classroom discourse rules.

Initially, descriptive research, modeled methodoligically on language acquisition studies, may be more appropriate than testing specific hypotheses. The following are therefore given as examples of the kind of information we eventually want to have.

First, given that the young child is an immature information processor and thus has certain developmental limits on the kinds of discourse and interaction cues which he will perceive and use, certain aspects of the classroom may serve to facilitate or hinder the learning of appropriate discourse and interactive rules. (Example of possible classroom factors: teacher-child ratio; type of instructional task; curriculum content; classroom architecture; amount and quality of explicit rule-formulation on the part of the teacher-that is, the degree to which rule-learning becomes the focus of overt attention.)

Second, given that the student is a member of a specific socio-ethnic group and that there will be limits on the kinds of discourse and interactional cues which he will perceive and use as a function of his previous conversational experience and his expectations about the roles of student and teacher, certain aspects of the classroom may serve to facilitate or hinder the learning of appropriate discourse and interaction rules. (Examples of possibly relevant aspects: teacher and student socio-ethnic characteristics; amount of information that the teacher has about the student; teacher-child ratio; amount and quality of explicit rule-formulation; amount of explicit reference to the child's previous conversational experience-particularly, references which explicitly relate a child's past to his present experience; type of instruction and task, curriculum content and classroom organization and the ways in which these are similar to and different from a student's previous school experience.)

Such knowledge would have important implications for theories of the acquisition of the many aspects of a child's total communicative competence, as well as practical consequences for teachers. For example, such knowledge will enable teachers to understand more fully the effects of classroom organization and other frame factors on students as a function of their prior communication history, and to select among more and less effective school enculturation strategies.

APPROACH 5.3

DETERMINE THE WAYS IN WHICH DIFFERENCES IN DIALECT, LANGUAGE STYLE, AND INTERACTIONAL NORMS AFFECT LEARNING IN THE CLASSROOM

It has been fairly well established that there are cultural differences in the functions and uses of language among various ethnic and cultural groups in the United States. (See, for example, Labov, 1970; Lein, 1973.) The idea of a mismatch in language functioning and use is widely held as an explanation of the educational difficulties of some children in the schools. (See, for example, Bernstein, 1972; Cazden, et al., 1972; and Cole and Scribner, 1973.) The empirical justification for this explanation is far from robust, and further research is necessary before concrete suggestions to teachers can be made. There is a long tradition in cognitive social sciences linking language and thought. The central issue for us is whether different patterns of language socialization and rules of language usage have discernible consequences for learning and cognition. (These differences may be between teacher and pupils and/or among pupils.)

The systematic study of these phenomena as they occur in the classroom can serve as a new way of refocusing the issues in communicative competence so that the whole notion of the processing of information in the acquisition of knowledge can be explicated more forthrightly in psycho- and socio-educational terms. At the same time, the results of such research can be put in such a form that it is available to teachers for self-diagnosis, and as general knowledge of teaching as a linguistic skill. Furthermore, such research would help teachers and other school professionals develop improved means for differentiating between cultural difference in dialect, language or communication styles on the one hand, and learning disabilities due to other causes on the other.

Note that Program 5.1.2 on frame factors fulfills part of the scope of this approach.

Program 5.3.1 : Compare Children's Interaction Patterns in Multiple Settings, Out of School as Well as in School.

Children may fail to participate verbally in classroom interaction because the conditions for participation to which they have become accustomed in their home community are lacking in the classroom. Changes from home to school in these conditions affect the most common and everyday speech acts that occur in the classroom. For example, if a child fails to follow an order, it may be because he does not understand the implicit rules governing when a declarative statement like "The next time will be very unlucky" is to be understood as a command to stop unstated but forbidden behavior (Forsyth, 1974). Teachers cannot assume that even if children speak English or are learning it in school, they have also assimilated all of the rules governing classroom interaction. To the extent that such cultural variation is ignored, feelings of inferiority and difficulties in learning will occur.

Research is therefore needed to compare the rules for interaction that obtain in school and rules to which children have become enculturated during their primary socialization in family and community settings. Sociolinguistic comparisons of home and school communication patterns have only been begun in the last few years, primarily by anthropologists. Three examples will illustrate the possibilities. Philips (1972) studied the speech patterns of children on the Warm Springs Indian Reservation in Oregon. At home, on the reservations, in any discussion, each individual determines the degree, form, and time of participation for himself, and there is no leader who has the right to enforce the participation of one person in the presence of others. In classrooms on the same reservation, children fail to respond when called upon, and are labelled as silent or shy or dumb. Lein (1973) focused on response to commands by children from Black migrant families from Florida who go to school in the summer in upper New York State. At home, adult commands without obvious justification, such as "Come stand over here by me," are invitations to the child to engage in a routined verbal game of child resistance and adult escalation of the commands and threats. In school, the same children thought that the situation for this game was defined by the content of the commands, did not understand that it was defined also by the setting (home but not school), and were labelled defiant by teachers who did not understand the source of the miscommunication. Erickson (1972) suggested that the type of interaction demanded for doing science, for example, in a high school classroom, may conflict with the patterns of interaction normal for black adolescents. For example, their out-of-school use of language to reinforce group solidarity may cause reluctance to argue about alternative ideas.

Two assumptions provide the basic theoretical framework of this approach. One is that if teachers and pupils do not share the same system of rules for speaking and for interpreting the social as well

as referential meaning of what others say, then the result will be miscommunication in the classroom, erroneous evaluations of children, and decreased opportunities for children to use language for learning; furthermore that this "sociolinguistic" difference may be more damaging to education than the more obvious difference in dialect or language alone.

A second assumption is that while research by scholars (such as Lein, Philips, and Erickson, cited above) must continue in order to work out research methods and to suggest likely substantive areas of concern, teachers will need to go beyond such research results and adapt the research methodologies for more informal observations of their own pupils.

The purpose of the research program is to further the teacher's understanding so that she can adopt interaction patterns that will enhance children's learning. In some cases, this may mean changing classroom patterns in the direction of the pupils' home type--e.g., decreasing the use of all-class recitation situations for the Indian children and increasing the use of small peer groups. In other cases, this may mean helping children learn new rules and communication strategies. Which strategy a teacher adopts will depend on the source of the problem, the age of the children, value decisions about the goals of education (adaptation to mainstream culture or maintenance of culture-pluralism or both), and the extent of our knowledge about how such rules for interaction behavior are acquired and how new rules can be taught (See Approach 5.2.). The problem of teaching new rules is complex and delicate because interaction norms may reflect basic cultural values. The conflicting norms in Warm Springs classrooms, for example, may involve conflicting premises about human relationships and the conditions under which one person has the right to control the behavior of another.

Program 5.3.2.: Determine How Two Languages or Dialects Are Combined in a Classroom and How Language and Dialect Differences Are Exploited for Communicative Ends Through Code and Style Switching.

The following definitions of the title elements were adopted by the Panel in formulating this program. Code-switching refers to the juxtaposition within a single overall message of elements that are otherwise recognized as elements in distinct grammatical systems (as distinct from the alternation of codes across different settings). Style-switching refers to a similar phenomena at the level of lexicon or rhythm or tone. Borrowing refers to the incorporation of elements from one grammatical system into the rule structure of another, as this process has been studied by students of language contact. Language mixing refers to the spontaneous and idiosyncratic incorporation of elements from one language system into the rule structure of another owing to such causes as inability to find the proper word or phrase, or attempts to conform to the norms of a system that the speaker does not control.

It is fairly well established that whenever children and teachers from different dialects or language backgrounds come together, as in most metropolitan classroom situations, code-switching and style-switching occur. Some evidence (for example, Gumperz & Hernandez-Chavez, 1972) suggests that children use the juxtaposition of two codes for rhetorical effect to indicate such things as emphasis, involvement in a task, etc. Because of teachers' lack of familiarity with these phenomena, such usage patterns are often misinterpreted, resulting in serious consequences for the learner in terms of (a) teacher expectation (see, e.g., Rist, 1970), (b) the acquisition of skills (see, e.g., Piestrup, 1973; Cole and Scribner, 1973), (c) social interaction, and (d) cognitive expansiveness of the type important for learning (see, e.g., Hall and Freedle, 1973; Hall, Reder, and Cole, 1974). These phenomena are just beginning to be accounted for by existing theories of grammar and language usage, and there is a lag between the theoretical work and information available to teachers and educators. This situation suggests the need for considerable pilot work focusing on analysis of actual classroom talk directed at the following: (a) description; (b) integration of description into existing theories; (c) differentiation of code-switching phenomena from superficially similar, but qualitatively different, phenomena, such as borrowing and language mixing; and (d) experimentation in disseminating results in forms most useful to teachers.

Recent findings suggest that natural conversations are often characterized by alternation in code and style. They further suggest that this alternation is necessary to communication in that it serves to channel discourse, enabling speakers to focus selectively on certain aspects of messages, to use indirectness and to distinguish between moods. (See, for example, Gumperz, 1974; Gumperz and Hernandez-Chavez, 1972.) Code-switching and style-switching occur with great frequency in the speech of accomplished bilingual and bidialectal speakers. But contrary to previous ideas, recent analyses indicate that first-language structures are not transferred to second language speech in the process of language learning (Dulay and Burt, 1972, 1974; Milon, 1972).

Two hypotheses are appropriate for research in this area. The first hypothesis is that if speakers code-switch or style-switch in a conversation, then, when tested in both languages or dialects, they demonstrate proficiency in each language or dialect. On the other hand, if speakers are deficient in either of two languages or dialects when tested in both languages or dialects, they do not code-switch or style-switch, but demonstrate "language mixing" in the sense that this term has been defined above, or they use only one language or dialect.

A second hypothesis is that if the teacher understands the phenomena of code-switching or style-switching, then the teacher will have a positive attitude toward children who display them. In particular, the teacher will view code-switching or style-switching as linguistic phenomena whose presence cannot be taken as evidence of inability or unwillingness to communicate in the classroom.

The Panel's basic assumption is that the application of findings by socio- and psycho-linguistics with respect to code- and style-switching can (a) improve understanding of the communicative processes in the classroom, (b) provide an explanation as to why some children feel alienated in classrooms, (c) provide teachers with a more accurate basis for judging children and choosing pedagogical techniques to use in instruction, and (d) provide evidence on the universality of cognitive functioning.

Program 5.3.3: Explore Science as a Curriculum Context for Teaching Children to Use More Context-Independent Speech.

Unlike the Panel's other programs, this one proposes developmental research in one specific curriculum area, namely, science. One critical characteristic of science as an activity is the need for precise communication, for descriptions that convey what was done and what was found out so explicitly that an experiment can be replicated and the results compared. These characteristics of scientific communication are those of "context-independent" speech, which contrasts with most everyday talk that often depends on the listener's knowledge to fill in relevant details. The nature of scientific communication will not be further documented here.

The literature on context-independent speech comes primarily from two sources: (a) the work of Basil Bernstein and his colleagues in England who have found social class differences in children's use of context-independent speech, and (b) the literature on the development of communication skills in the United States, literature which documents both the slow development and the subcultural differences in this particular referential communication skill (Flavell, 1968; Heider et al., 1968; etc.). Some attempts have been made to teach more explicit communication--in small experimental settings (Gleason, 1972) or in special language activities in the classroom (Gahagan & Gahagan, 1970). There is also one study evaluating a science program for its efforts on childrens' language usage (J.C. Gumperz & Bowyer, 1972). This study is sufficiently promising to merit further exploration.

The hypothesis for this program is that a science program for children which involves both the manipulation of concrete materials, and then a colloquium in which teachers guide children's talk into more and more explicit descriptions of what they did and found out, will have a significant effect on the children's general referential communication skills when tested experimentally out of the science context--e.g., in a two-person communication game.

The underlying assumption for Program 5.3.3 is that rules of language usage may be learned best by being used in natural communication contexts where they are required. Science lessons constitute one example of such contexts. Furthermore, the value neutrality of science content and scientific terminology may be an additional asset in facilitating classroom communications. Hence, the purpose is to explore the value of one curriculum context for its effect on one particular kind of cognitively valuable classroom discourse and to work out explicit strategies for teaching science to this purpose.

Science as one curriculum context is an example of a frame variable (see Program 5.1.2). Another aspect of science--the presence of manipulable materials and operations on them as clear and concrete referents for the nouns and verbs of classroom discourse -- is discussed under optimum conditions for second language learning.

APPROACH 5.4

DESCRIBE AND ANALYZE PATTERNS OF STUDENT-TEACHER COMMUNICATION IN ORDER TO DETERMINE THE EFFECT OF THE SOCIAL IDENTITY OF THE PARTICIPANTS ON THE WAY IN WHICH TEACHERS OVERTLY AND COVERTLY PRESENT INFORMATION; AND ANALYZE THE EFFECT OF SUCH DIFFERENTIAL PRESENTATIONS ON THE ACQUISITION OF KNOWLEDGE AND SKILL

General Discussion

Theories about education as a cultural process (e.g., Gearing and Sangree, in press) predict that a teacher will differentially present information to students as a function of the student's social identity (i.e. age, sex, SES, ethnicity) and the teacher's perception of the extent to which the information that she intends to impart should be restricted to specific people. For example, both the amount and quality of communications concerning access to the resources for entrance into college might vary within a given classroom or school according to the socio-ethnic background of the individual students and the teacher's perception of the kind of person who is entitled to receive that information. If the teacher held that access to college was the domain and privilege of persons like herself, she might either fail to present an adequate amount of information to those students whom she perceived as being different from herself, or she might present a sufficient amount of information but simultaneously convey the underlying message that, in fact, college entrance is an inappropriate goal for such students.

By contrast, the theory predicts that there will be no difference in the quality or quantity of teacher communication when she perceives the information to be imparted as entailing no particular privilege, power, or status. That is, teachers will provide functionally equivalent communications to all students about such things as how to tell time, how to obtain driver training, and so forth.

In other words, the theory assumes that there are "hidden curricular" dimensions in all communications structures, and it both describes some of the ways in which the "hidden" messages are conveyed and predicts the quality and quantity of communication in certain types of interactions. That is, the theory predicts which type

of person is likely to be presented with which type of messages from which type of sender.

Underlying the theory is the assumption that differential patterns of presentation will affect students' opportunity to acquire specific categories of knowledge and skill.

Summary of Background and Current Knowledge

The roots of the present approach lie in the cross-cultural ethnographic research on the processes through which an infant learns to be a member of his culture, especially in societies without formally organized educational institutions.

The work which has led to this approach has been influenced by a variety of social scientific disciplines. Descriptive accounts of educational processes by a number of people have led to insights about differences in the quantity and quality of teacher communications as a function of student social identity. (See Gearing and Tindall, 1973; Gearing, 1973; Gearing and Sangree, in press, for reviews of this work.) The importance of analyzing non-verbal as well as verbal aspects of communication has been emphasized by recent micro-analytic studies (see, especially, Argyle, 1973; Condon and Ogston, 1967; Kendon, 1972; Scheflan, 1973; Schegloff, 1968; Soskin and John, 1963; Erickson, 1973). The importance of attending to the value systems of the participants in a communicative act has been emphasized by the work of Cole, Gay, Glick, and Sharp (1971); and Wallace (1970).

Three hypotheses are appropriate to this approach. First quantitative and qualitative differences will be evident in the presentation of information as a function of the teacher's perception of the value of that information, particularly with respect to whether it entails particular privilege, power, or status. Second, presentational differences will occur as a function of a student's social identity and the teacher's perception of the kind of person who is entitled to a given item of information. Third, differential presentations of information based on the social identities of students and teacher will result in differential acquisition of that information and an uneven distribution of information based on social identity.

Theoretical Framework of the Approach

One basic assumption underlying this approach is that if a person can learn his native language, he probably has the necessary mental capabilities to learn all but the most abstract kinds of information and skills existing in his cultural system. It is obvious, however, that some people have not acquired even the most basic skill imparted by the school (e.g., reading). Until it can be demonstrated that a student has been presented with the appropriate information and that the presentation is adequate both in terms of the quantity and quality

of the communications, we cannot reasonably explain the failure to acquire such information in terms of learning disability, cultural "deprivation," inadequate motivation, or any other intrapsychic phenomena. In other words, we cannot reasonably conclude that differences in acquisition imply differences in student abilities until we can be certain that students have been presented functionally equivalent amounts of information, communicated in ways that encourage access to that information.

The specific purpose and objective of this approach is thus to help teachers become aware of the ways in which their communications convey information to students, both overt, factual information and covert, or tacit, information about differential access. Ultimately the purpose of such inquiry is to help teachers provide adequate and functionally equivalent communications for all students. Plausible ways of doing this are described in Approach 5.6.

APPROACH 5.5

SPECIFY THE CRITICAL COMPONENTS OR CHARACTERISTICS OF NATURAL COMMUNICATION SITUATIONS THAT ARE NECESSARY FOR THE ACQUISITION OF COMMUNICATIVE SKILLS IN A SECOND LANGUAGE, AND THAT ENCOURAGE NATIVE LANGUAGE MAINTENANCE

For the purposes of this approach, a communication situation refers to a verbal exchange where the speaker and hearer focus on the content of the exchange rather than on its form.

In recent years an increasing number of researchers and teachers have begun to question the basic premises that underlie second language teaching techniques in use today. Many teachers have expressed the frustrations resulting from the realization that many of the second language structures they teach are not used by children in their spontaneous speech, yet structures that were not explicitly taught in class are somehow learned. Researchers have joined teachers in their questioning of the language learning principles underlying current second language teaching methodology. Recent research comparing first and second language acquisition strongly suggests that second language acquisition, like first language acquisition, is not governed by the learning principles of habit formation which had been unquestioningly applied to second language teaching. Rather, current second language research indicates that children learn a second language by gradually reconstructing the grammatical system to which they are exposed in natural speech. This "creative construction" process is guided by universal cognitive mechanisms which cause the child to organize the speech he hears in certain ways and in successive stages, until the mismatch between the learner's speech and the speech he is exposed to disappears (Ervin-Tripp, manuscript; Dulay and Burt, 1972, 1973, 1974; Huang, 1971; Milon, 1972).

Our present knowledge of the language acquisition process indicates that the child's exposure to natural communication situations results in the child's acquisition of a second language. But not all natural communication situations are conducive to successful language learning, and we lack systematic research that specifies the critical characteristics of a communication situation that are conducive to language

acquisition. We want to know more about how second language can be enhanced through classroom discourse both within the general school curriculum and in special language classes.

Furthermore, the process of becoming bilingual is best compared to a pair of sliding scales, one scale being the native language, the other the second language. The pressures of linguistic acculturation in U.S. schools have often caused interruption of native language development and its gradual loss, as English is acquired during the school years. We hope that research on interaction in bilingual classrooms can help us understand how to prevent this loss while English is being learned.

Four hypotheses were developed by the Panel as relevant to this approach. One hypothesis is that if the subject matter of a course is such as to arouse a child's interest, and the teacher's strategy involves the child in the learning process, the involvement in itself will lead to language or dialect learning without explicit teaching of grammar.

A second hypothesis is that if the teacher, as part of the classroom interaction, corrects the child's grammar when the child's intention is to communicate, this will lead to decreased motivation both to speak and to learn, and to decreased achievement.

A third hypothesis is that if the subject matter of a course is such that most activities in the course include manipulation of objects by children, instructions that are clearly demonstrable, clear referents for the nouns and verbs in classroom discourse -- such as those in elementary science, children will learn both the concepts presented in the activities and second language structure.

And finally, if positive attitudes toward the child's native language are conveyed by teachers in everyday classroom discourse and interaction, then children will be more likely to maintain their native language than if a teacher conveys negative attitudes towards the native language.

The specific purpose of the research in this approach is to determine the ways in which natural communication situations in bilingual classrooms can be used to enhance the learning of English while not contributing to the loss of the child's native language.

APPROACH 5.6

DEVELOP AND FIELD TEST MATERIALS AND PROCEDURES TO IMPROVE TEACHING AND THEREBY LEARNING ON THE BASIS OF KNOWLEDGE ABOUT LINGUISTIC PROCESSES IN CLASSROOMS

Educational research has shown that a teacher's behavior can be modified by training and that the change can be persistent (Borg, et al, 1970; McDonald and Allen, 1967). But greater knowledge is needed concerning the changes in teaching behavior -- skills, conceptions for interpretation of behavior, attitudes, etc., -- that are positively associated with pupil achievement and concomitant learnings. Such knowledge is basic to teacher education programs. The study of classroom and non-school discourse represents an attempt to solve a particular aspect of the problem of acquiring this knowledge.

It has also been shown that teacher behavior can be modified by the systematic study of films and tape recordings where these materials exemplify particular concepts or teaching acts or both. In other words, properly developed laboratory materials can be effective in changing the behavior of teachers (Borg, 1973; Cooper, 1974).

Finally, let it be noted that this approach differs from those of Panels 2 and 4 in that it is limited strictly to linguistic variables as these appear in a variety of settings, and among various ethnic groups, both in and out of school.

Studies in psychology (e.g., Bandura, 1969) support the proposition that learning occurs through observation as well as other ways. According to these studies, one can learn a pattern of behavior by observing it as performed by others. One not only learns to perform the pattern but also to recognize its structure, the latter being a learning which one may not acquire simply from practicing the pattern.

Further, recent studies by anthropologists have shown that the tendency of behavior to change is related to the degree of viewer involvement: greater change occurs when teachers analyze videotapes of their own behavior and when teachers themselves design the observation schemes (Project in Ethnography and Education, 1972, 1973, and 1974).

Six hypotheses are presented under this Approach. It should be noted that the first three raise a general question about when a teacher's self analysis can be best aided by substantive information from previous research -- at the beginning or later when she has become more aware of her own behavior in her own terms.

Hypothesis A: If teachers are presented with examples of a range of classroom interaction patterns, on film and tape, along with information about the participants, setting, etc., the observation and study of these will result in awareness of the interaction patterns which characterize their own classrooms and ability to diagnose problems in that interaction.

Hypothesis B: If a teacher has made a diagnosis in accordance with the ability to diagnose referred to in Hypothesis A and is presented with alternative strategies of teaching behavior by means of filmed material, he will interact more effectively in his own classroom.

Hypothesis C: Desirable teacher behavior change increases as a function of the degree to which the teacher has been involved in the development of strategies of analysis and the use of his or her own behavior as a focus for that analysis.

The assumptions made in this hypothesis stem largely from psychology and anthropology. This is especially true of the assumption that seeing oneself in the performance of undesirable acts creates motivation for change and that the "seeing" is made more powerful if the person is led to the "seeing" by his own efforts.

Hypothesis D: If teachers are led to analyze films and tape recordings of pupils' verbal behavior outside the classroom in such situations as conversations with parents, with friends, in street groups, etc., they will become aware of the range of communicative abilities that such children already possess, and will be more likely to look for the source of miscommunication in the patterns of classroom interaction rather than in deficiencies in the children.

Hypothesis E: If teachers have the opportunity to study tapes and transcripts of children which draw attention to features of what is regarded as non-standard language in such a way that they are required to determine the grammatical rules themselves, they will develop more positive attitudes toward the dialect in question and, as a result, toward the speakers as well.

There is no expectation that teachers will learn to speak another variety of English. Moreover, the approach embodied in this hypothesis contrasts markedly with attempts simply to persuade teachers that they ought to have different attitudes toward the speech of their pupils.

Hypothesis F: Teachers' modifications of interaction patterns in the classroom lead to changes in pupil behavior -- for example, changes in attitudes toward the classroom, the teacher, achievement, and so on. Such modifications also result in changes in the teacher's perceptions of and attitudes toward the pupils.

(Note: Because of restrictions of time, hypotheses in the Panel's other Approaches and Programs have not been elaborated into further hypotheses about procedures and materials for teacher preparation or the field testing of such procedures and materials. In the funding of projects by NIE, these hypotheses should by no means be overlooked.)

SUMMARY

Panel 5 was concerned with three major questions: In what way is effective communication in the classroom different from ordinary everyday talk to which all children are enculturated? What communication problems are encountered when the participants come from different cultural backgounds? How can the teacher's work be improved on the basis of the understandings achieved in research aimed at the first two questions?

The first of these questions would be approached by research on ways of describing classroom talk and the contextual variables that influence it. It would also be approached by research on the ways in which children learn to talk appropriately in school (a virtually untouched area). That implicit rules do exist for the classroom discourse "game" and that children must learn these rules is revealed only when a "stumble" occurs in the normal flow of talk.

The second question -- What communication problems are encountered when the participants come from different cultural backgrounds? -- would be studied through research on contextual factors; since these include student and teacher characteristics, this approach would subsume such issues as the interaction between the structure and size of the classroom and the cultural background of the students. The second question would also be approached through studies of three specific aspects of cultural differences in the use of language: comparisons of language use in the school and at home, studies of the phenomenon of "code switching" (or changing from one language code to another) as it occurs in bilingual and bidialectal classrooms, and the suggestion that one curriculum area, namely science, be developed as a means of expanding the discourse repertoire of children. A further approach to this question would consist of examining differences in the quantity and quality of encounters between teachers and children. Encounters in which knowledge and skill is transmitted would be compared with those in which knowledge and skill is not transmitted. Finally, the question would be approached through studies of interaction in bilingual classrooms. An effort would be made to determine those aspects of classroom discourse that can contribute most to second language learning yet have the least effect on first language loss.

On the third question -- How can the teacher's work be improved on the basis of understandings achieved in research on the first two questions? -- research would proceed on the assumption that the most potent effects on teaching come through a teacher's analysis of her own behavior. This assumption implies that such effects are greater than those that come from the presentation of substantive findings. Effective methods for analyzing any aspect of classroom discourse will not only yield substantive information, but also constitute procedures that may be adapted for teacher training in self-analysis.

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